Output for FCFS process scheduling:

```
C:\Users\Admin\Documents\OS lab\Process Scheduling\FCFS.exe

Enter the no. of proess:
5
Enter the arrival time and burst time of process1 3 4
Enter the arrival time and burst time of process2 5 3
Enter the arrival time and burst time of process3 0 2
Enter the arrival time and burst time of process4 5 1
Enter the arrival time and burst time of process5 4 3
arranged order of process according to arrival time:
process3 0 2
process1 3 4
process5 4 3
process4 5 1
process2 5 3
process waiting tat
3        0        2
1        0        4
5        3        6
4        5        6
2        6        9
Average turnaraound time is: 5.4
Average waiting time is: 2.8

-----------------------------------
Process exited after 65 seconds with return value 0
Press any key to continue . . . _
```

Output for Shortest Job First Process Scheduling:

```
C:\Users\Admin\Documents\OS lab\Process Scheduling\sjf.exe
Enter the no. of process:
5
Enter the arrival time and burst time of process1 0 4
Enter the arrival time and burst time of process2 1 3
Enter the arrival time and burst time of process3 2 1
Enter the arrival time and burst time of process4 3 5
Enter the arrival time and burst time of process5 4 2
process   arrival time    burst time        waiting time      turnaround time
1               0               4                 0                  4
3               2               1                 2                  3
5               4               2                 1                  3
2               1               3                 6                  9
4               3               5                 7                  12
Average turnaraound time is: 6.2
Average waiting time is: 3.2

----------------------------------
Process exited after 21.17 seconds with return value 0
Press any key to continue . . .
```

Output for Round Robin Process Scheduling

```
C:\Users\Admin\Documents\OS lab\Process Scheduling\round.exe

Total number of process in the system: 4

Enter the Arrival and Burst time of the Process1:0 8

Enter the Arrival and Burst time of the Process2:1 5

Enter the Arrival and Burst time of the Process3:2 10

Enter the Arrival and Burst time of the Process4:3 11
Enter the Time Quantum for the process: 6

Process No            Burst Time            TAT            Waiting Time
Process No[2]         5                     10             5
Process No[1]         8                     25             17
Process No[3]         10                    27             17
Process No[4]         11                    31             20
 Average Turn Around Time: 14.75
 Average Waiting Time: 23.25
------------------------------
Process exited after 31.48 seconds with return value 0
Press any key to continue . . .
```

Output for Priority Scheduling

```
C:\Users\Admin\Documents\OS lab\Process Scheduling\priority.exe
Enter Total Number of Process:5

Enter Burst Time and Priority

P[1]
Burst Time:4
Priority:2

P[2]
Burst Time:3
Priority:3

P[3]
Burst Time:1
Priority:4

P[4]
Burst Time:5
Priority:5

P[5]
Burst Time:2
Priority:5

Process        Burst Time          Waiting Time      Turnaround Time
P[1]              4                     0                  4
P[2]              3                     4                  7
P[3]              1                     7                  8
P[4]              5                     8                  13
P[5]              2                     13                 15

Average Waiting Time=6.4
Average Turnaround Time=9.4
---------------------------------
Process exited after 53.26 seconds with return value 0
Press any key to continue . . . _
```

Output for Banker's Algorithm:

```
C:\Users\Admin\Documents\OS lab\banker's algorithm.exe
Enter the no. of process(max 10): 5

Enter the no. of resources(max 10): 3
Enter the allocation for process 1: 0 1 0
Enter the maximum required for process1: 7 5 3
Enter the allocation for process 2: 2 0 0
Enter the maximum required for process2: 3 2 2
Enter the allocation for process 3: 3 0 2
Enter the maximum required for process3: 9 0 2
Enter the allocation for process 4: 2 1 1
Enter the maximum required for process4: 2 2 2
Enter the allocation for process 5: 0 0 2
Enter the maximum required for process5: 4 3 3
Enter the available resources: 3 3 2
Resources needed for process 1: 7 4 3
Resources needed for process 2: 1 2 2
Resources needed for process 3: 6 0 0
Resources needed for process 4: 0 1 1
Resources needed for process 5: 4 3 1
For Process 1
Process 1 is not in safe state
For Process 2
Process 2 is in safe state
For Process 3
Process 3 is not in safe state
For Process 4
Process 4 is in safe state
For Process 5
Process 5 is in safe state
For Process 1
Process 1 is in safe state
For Process 3
Process 3 is in safe state
Sequence of process:process 2>>process 4>>process 5>>process 1>>process 3>>
--------------------------------
Process exited after 66.01 seconds with return value 0
Press any key to continue . . . _
```

Output for First In First Out Page Replacement Algorithm:

```
C:\Users\Admin\Documents\OS lab\Page replacement\FIFO(Page).exe

Enter the frame size:3
Page Reference Stream Length: 10
Page Reference Stream:
0 1 7 2 3 2 7 1 0 3
Frame size: 3
Page faults: 7
Page Hits: 3


----------------------------------
Process exited after 27.57 seconds with return value 0
Press any key to continue . . .
```

Output for Optimal Page Replacement Algorithm:

```
C:\Users\Admin\Documents\OS lab\Page replacement\optimal.exe

Enter length of page reference sequence:10

Enter the page reference sequence:
0 1 7 2 3 2 7 1 0 3

Enter no of frames:3

For 0: 0
For 1: 01
For 7: 017
For 2: 217
For 3: 237
For 2: No page fault
For 7: No page fault
For 1: 137
For 0: 037
For 3: No page fault
Total no of page faults:7
--------------------------------
Process exited after 35 seconds with return value 0
Press any key to continue . . .
```

Output for Least Recently Used(LRU) Page Replacement Algorithm

```
C:\Users\Admin\Documents\OS lab\Page replacement\LRU.exe

Enter length of page reference sequence:10

Enter the page reference sequence:
0 1 7 2 3 2 7 1 0 3

Enter no of frames:4

For 0:0
For 1:01
For 7:017
For 2:0172
For 3:3172
For 2:No page fault!
For 7:No page fault!
For 1:No page fault!
For 0:0172
For 3:0173
Total no of page faults: 7
---------------------------------
Process exited after 28.55 seconds with return value 0
Press any key to continue . . .
```

Output for Least Frequently Used(LFU) Page Replacement Algorithm

```
C:\Users\Admin\Documents\OS lab\Page replacement\LFU.exe

Enter length of page reference sequence:10

Enter the page reference sequence:
0 1 7 2 3 2 7 1 0 3

Enter no of frames:4

 For 0 :0
 For 1 :01
 For 7 :017
 For 2 :0172
 For 3 :3172
 For 2 :No page fault!
 For 7 :No page fault!
 For 1 :No page fault!
 For 0 :0172
 For 3 :3172
Total no of page faults: 7
--------------------------------
Process exited after 33.27 seconds with return value 0
Press any key to continue . . .
```

Output for Second Chance Page Replacement Algorithm

```
C:\Users\Admin\Documents\OS lab\Page replacement\SecondChance.exe

Enter length of page reference sequence:18

Enter the page reference sequence:
0 4 1 4 2 4 3 4 2 4 0 4 1 4 2 4 3 4

Enter no of frames:3

For 0:0
For 4:04
For 1:041
For 4:No page fault!
For 2:241
For 4:No page fault!
For 3:243
For 4:No page fault!
For 2:No page fault!
For 4:No page fault!
For 0:043
For 4:No page fault!
For 1:041
For 4:No page fault!
For 2:241
For 4:No page fault!
For 3:243
For 4:No page fault!
Total no of page faults: 9
---------------------------------
Process exited after 82.83 seconds with return value 0
Press any key to continue . . .
```

Output for First Come First Serve Disk Scheduling Algorithm


```
C:\Users\Admin\Documents\OS lab\Disk Scheduling\FCFS(Disk).exe

*** FCFS Disk Scheduling Algorithm ***
Enter the size of disk
200
Enter number of requests
7
Enter the requests
82 170 43 140 24 16 190
Enter the head position
50
50 -> 82  -> 170  -> 43  -> 140  -> 24  -> 16  -> 190
Total head movements = 642

---------------------------------
Process exited after 32.19 seconds with return value 0
Press any key to continue . . .
```

Output for Shortest Seek Time First (SSTF) Disk Scheduling Algorithm


```
C:\Users\Admin\Documents\OS lab\Disk Scheduling\sstf(disk).exe

*** SSTF Disk Scheduling Algorithm ***
Enter the size of Queue 7
Enter the Queue 82 170 43 140 24 16 190
Enter the initial head position 50

Total Seek Time is 208
--------------------------------
Process exited after 81.05 seconds with return value 0
Press any key to continue . . .
```

Output for SCAN Disk Scheduling Algorithm

```
■■ C:\Users\Admin\Documents\OS lab\Disk Scheduling\SCAN(disk).exe

Enter no. of request : 7
enter value of initial head position : 50
Enter the requests 82 170 43 140 24 16 190

Total head movement = 240 cylinders
---------------------------------
Process exited after 39.87 seconds with return value 0
Press any key to continue . . .
```

Output for C-SCAN Disk Scheduling Algorithm

```
Select C:\Users\Admin\Documents\OS lab\Disk Scheduling\CSCAN(disk).exe

Enter the max range of disk
199
Enter the initial head position
50
Enter the size of queue request
7
Enter the queue of disk positions to be read
82 170 43 140 24 16 190
Disk head moves from 50 to 82 with seek 32
Disk head moves from 82 to 140 with seek 58
Disk head moves from 140 to 170 with seek 30
Disk head moves from 170 to 190 with seek 20
Disk head moves from 190 to 199 with seek 9
Disk head moves from 199 to 0 with seek 199
Disk head moves from 0 to 16 with seek 16
Disk head moves from 16 to 24 with seek 8
Disk head moves from 24 to 43 with seek 19
Total seek time is 391

--------------------------------
Process exited after 33.15 seconds with return value 0
Press any key to continue . . .
```

Output for LOOK Disk Scheduling Algorithm

```
C:\Users\Admin\Documents\OS lab\Disk Scheduling\LOOK(disk).exe

Enter the no of request: 7
Enter initial head position: 50
Enter the request:82 170 43 140 24 16 190
Disk head moves from 50 to 43 with seek 7
Disk head moves from 43 to 24 with seek 19
Disk head moves from 24 to 16 with seek 8
Disk head moves from 16 to 82 with seek 66
Disk head moves from 82 to 140 with seek 58
Disk head moves from 140 to 170 with seek 30
Disk head moves from 170 to 190 with seek 20
Total seek time is 208
--------------------------------
Process exited after 27.37 seconds with return value 0
Press any key to continue . . .
```

Output for C-LOOK Disk Scheduling Algorithm

```
C:\Users\Admin\Documents\OS lab\Disk Scheduling\CLOOK(disk).exe

Enter the no of request: 7
Enter initial head position: 50
Enter the request:
82 170 43 140 24 16 190
Disk head moves from 50 to 43 with seek 7
Disk head moves from 43 to 24 with seek 19
Disk head moves from 24 to 16 with seek 8
Disk head moves from 16 to 0 with seek 16
Disk head moves from 0 to 199 with seek 199
Disk head moves from 199 to 190 with seek 9
Disk head moves from 190 to 170 with seek 20

Total seek time is 278
--------------------------------
Process exited after 29.27 seconds with return value 0
Press any key to continue . . .
```